

THE INVENTION CLAIMED IS:

1. A holder assembly comprising:

a holder housing adapted to receive a sample collection tube within a rearward end, a forward end of the holder housing including a needle receiving port for receiving a needle cannula therein and an annular skirt extending about the needle receiving port; and

a safety shield pivotably attached to a collar, said collar having an opening therethrough for receiving a needle cannula therethrough, the collar received between the annular skirt and the needle receiving port of the holder housing such that the safety shield is capable of being pivoted over at least a portion of a needle received within the needle receiving port of the holder housing,

wherein the safety shield and the collar are rotatable with respect to the holder housing about an axis of the holder housing.

2. The holder assembly of claim 1, wherein the collar is annular.

3. The holder assembly of claim 1, wherein the shield comprises a rearward end, a forward end, a longitudinal opening in the forward end for receiving a needle, and a hanger bar on the rearward end adapted to connect the safety shield to the collar.

4. The holder assembly of claim 3, wherein the collar comprises a hook arm, the hook arm engages the hanger bar for connecting the safety shield to the collar whereby there is an interface fit between the hanger bar and the hook arm.

5. The holder assembly of claim 1, wherein an outer surface of the collar includes a protrusion and an inner surface of the annular skirt includes a groove, the groove on the annular skirt adapted to receive the protrusion on the annular collar, thereby providing an interface fit when the collar is received between the annular skirt and the needle receiving port of the holder housing.

6. The holder assembly of claim 5, wherein the protrusion is annular and extends around the outer surface of the collar and the groove is annular and extends around the inner surface of the annular skirt.

7. The holder assembly of claim 4, wherein the annular skirt on the holder housing substantially encloses an open end of the hook arm, thereby preventing the interface fit between the hanger bar and the hook arm from releasing when the collar is received between the annular skirt and the needle receiving port of the holder housing.

8. The holder assembly of claim 1, wherein the collar has one or more slits defined in a rearward annular collar section thereof.

9. The holder assembly of claim 1, wherein the shield and the collar are integral and attached through a living hinge.

10. A method of assembling a needle holder assembly comprising:

(a) providing a holder housing having a forward end and a rearward end adapted to receive a sample collection tube within the rearward end of the holder housing, the forward end of the holder housing comprising a needle receiving port for receiving a needle cannula therein and an annular skirt extending about the needle receiving port;

(b) providing a safety shield comprising a rearward end, a forward end, an opening in the forward end for receiving a needle, and a mating element on the rearward end;

(c) providing an annular collar for rotatably connecting the pivotable shield to the holder housing, the annular collar comprising a mating structure for engagement with the safety shield for attaching the safety shield to the annular collar;

(d) mating the mating element of the safety shield with the mating structure of the annular collar; and

(e) inserting the annular collar having the safety shield attached thereto within a recess between the annular skirt and the needle receiving port.

11. A method as in claim 10, wherein the annular skirt of the holder housing extends to substantially mate with the mating structure of the annular collar, thereby preventing unmating of the safety shield from the annular collar when the safety shield is pivoted to extend about a needle received within the needle receiving port of the holder housing.

12. A method as in claim 10, wherein the mating element on the safety shield is a bar and the mating structure on the annular collar is a hook element, and said mating step comprises interfitting the bar within the hook element.

13. A holder assembly comprising:
a holder housing adapted to receive a sample collection tube within a rearward end, a forward end of the holder housing including a needle receiving port for receiving a needle cannula therein and a skirt extending about the needle receiving port, the needle receiving port and the skirt defining a recess area therebetween, and
a collar received within the recess area of the holder housing, the collar including a safety shield attached thereto.

14. A holder assembly as in claim 13, wherein the skirt extends away from the forward end of the holder housing a distance sufficient to substantially meet with a structure for providing pivotal engagement between the collar and the safety shield.

15. A holder assembly as in claim 13, wherein the safety shield is connected to the collar by means of a hook arm on the collar which engages a bar on the safety shield.

16. A holder assembly as in claim 15, wherein the skirt extends to substantially enclose an opening of the hook arm when the bar of the safety shield is

received within the hook arm when the collar is received within the recess area of the holder housing.

17. A holder assembly of claim 13, wherein the shield and the collar are integral and attached through a living hinge.

18. A holder assembly as in claim 13, wherein the recess area includes a groove and the collar includes a protrusion, thereby providing an interface fit between the groove and the protrusion when the collar is received within the recess area of the holder housing.

19. A holder assembly as in claim 13, wherein the collar and the skirt are both annular.

20. A holder assembly as in claim 19, wherein the protrusion extends around the entire outer surface of the collar and the groove extends around an entire surface which defines the recess.

21. The holder assembly as claimed in claim 13, wherein the collar has one or more slits defined in a rearward collar section thereof.

22. The holder assembly as claimed in claim 13, wherein the collar is rotatable about an axis of the holder housing.

23. A holder assembly comprising:
a holder housing adapted to receive a sample collection tube within a rearward end, a forward end of the holder housing including a needle receiving port for receiving a needle cannula therein, the holder housing having an annular skirt extending from the forward end, and

a collar which attaches to the forward end of the holder housing, the collar having a hook arm for connection of a safety shield, wherein the annular skirt abuts the hook arm when the holder housing and the collar are in an attached position.

24. The holder assembly as claimed in claim 23, wherein the collar is rotatable about an axis of the holder housing.

25. The holder assembly as claimed in claim 23, wherein the collar further comprises an interior opening for receiving a needle cannula therein.

26. The holder assembly as claimed in claim 25, wherein the interior opening includes structure for engagement with corresponding mating structure on a needle cannula assembly.

27. A holder assembly comprising:

a holder housing including an annular skirt extending from a forward end, the forward end of the holder housing adapted to receive a needle cannula therethrough for engagement with a piercable member of a container received within the rearward end thereof,

a collar attached to the forward end of the holder housing, and

a safety shield in pivotable engagement with the collar,

wherein the annular skirt extends from the forward end of the holder housing a distance sufficient to substantially meet with structure providing the pivotable engagement between the collar and the safety shield.

28. A holder assembly as in claim 27, wherein the safety shield is connected to the collar by means of a hook arm on the collar which engages a bar on the safety shield.

29. The holder assembly as claimed in claim 28, wherein the skirt extends to substantially enclose an opening of the hook arm when the bar of the safety shield is

received within the hook arm when the collar is received within the recess area of the holder housing.

30. The holder assembly as claimed in claim 27, wherein the holder housing is adapted to receive a sample collection tube including a piercable stopper within the rearward end.

31. The holder assembly as claimed in claim 27, wherein the collar includes structure for supporting a needle cannula therethrough.

32. A holder assembly comprising:
a holder housing adapted to receive a sample collection tube within a rearward end of said holder housing, the forward end of the holder housing adapted to receive a needle cannula therethrough for engagement with a sample collection tube received within the rearward end thereof,
a collar attached to the forward end of the holder housing, and
a safety shield in pivotable engagement with the collar,
wherein at least a portion of the forward end of the holder housing and at least a portion of the collar provide a pivot axis for the safety shield.

33. A holder assembly comprising:
a holder housing adapted to receive a sample collection tube within a rearward end of said holder housing, the forward end of the holder housing adapted to receive a needle cannula therethrough for engagement with a sample collection tube received within the rearward end thereof, the forward end of the holder housing comprising a rearward bearing surface; and
a collar attached to the forward end of the holder housing, the collar comprising a forward bearing surface and a safety shield pivotably rotatable with respect the holder, the safety shield comprising a journal for pivotable rotation thereof;

wherein the rearward bearing surface of the holder housing and the forward bearing surface of the collar form an effective bearing for supporting the safety shield journal.

34. The holder assembly of claim 33, wherein the collar is restricted from rotation with respect to the holder housing after assembly.

35. The holder assembly of claim 33, wherein the holder housing further comprises flange protrusions radially extending from the rearward end of the holder.

36. The holder assembly of claim 33, wherein removal of the safety shield from the holder assembly is resisted by the forward end of the holder housing and portions of the collar.

37. The holder assembly of claim 33, wherein removal of the safety shield from the holder assembly is restricted by the rearward bearing surface of the holder and the forward bearing surface of the collar.

38. The holder assembly of claim 33, wherein the rearward bearing surface of the holder and the forward bearing surface of the collar each have a radius within 30% of a radius measured on the journal.